

WHAT IS CLAIMED IS:

1. A network device comprising:
an output port; and
a memory coupled to the output port, wherein
the output port is configured to output packets for transmission via a
network tunnel,
the memory is configured to store information, and
the information identifies packets which have been forwarded via the
network tunnel.
2. The network device of claim 1, further comprising:
a queue configured to store a copy of a packet forwarded to the output port.
3. The network device of claim 2, further comprising:
a control unit coupled to the output port and the queue.
4. The network device of claim 3, wherein
the memory is comprised in the control unit; and
the control unit is configured to update the information in the memory to
indicate that the packet was sent via the network tunnel, in response to
forwarding the packet to the output port.
5. The network device of claim 3, wherein
the control unit is configured to recirculate a copy of the packet to a port with
which the queue is associated, and
the copy of the packet is stored in the queue in response to the packet being
recirculated.
6. The network device of claim 3, wherein
the control unit is configured to identify a flow of a plurality of flows being
aggregated for transmission via the network tunnel,
the flow comprises a particular packet, and

the control unit is configured to select whether the particular packet is admitted to the network tunnel based on the flow in which the particular packet is comprised.

7. The network device of claim 6, wherein the control unit is configured to drop the particular packet if the flow currently has a threshold number of packets stored in the queue; and the control unit is configured to admit the particular packet for transmission via the network tunnel if the flow currently has fewer than the threshold number of packets stored in the queue.

8. The network device of claim 3, wherein the control unit is configured to forward the copy of the packet stored in the queue to the output port for transmission via the network tunnel if the packet is dropped in the network tunnel.

9. The network device of claim 8, wherein the control unit is configured to determine that the packet was dropped in the network tunnel in response to the information stored in the memory and in response to information received from another network device.

10. The network device of claim 8, wherein the control unit is configured to send the copy of the packet stored in the queue via the network tunnel if the copy of the packet is dropped in the network tunnel.

11. The network device of claim 3, wherein the control unit is configured to control a usage level of the queue by adjusting a rate at which packets are removed from the queue, and the control unit is configured to admit a particular packet for transmission via the network tunnel based on the usage level of the queue.

12. The network device of claim 11, wherein

the control unit is configured to reduce the rate at which packets are removed from the queue if the usage level of the queue exceeds a threshold usage level.

13. The network device of claim 3, wherein the control unit is configured to forward a new packet to the output port for transmission via the network tunnel if no packets have been transmitted via the network tunnel for a period of time.

14. A network device comprising an input port configured to receive a packet conveyed via a network tunnel; and a control unit coupled to the input port, wherein the control unit is configured to:
detect reception of the packet by the input port, and
generate information, and
the information indicates whether the packet is a particular packet.

15. The network device of claim 14, wherein the particular packet is an expected packet.

16. The network device of claim 14, wherein the control unit is configured to include the information in a tunnel update packet, and the tunnel update packet includes a sequence number of a next packet expected to be received by the network device.

17. The network device of claim 14, further comprising: an output port, wherein the control unit is configured to forward the tunnel update packet to the output port for transmission to another network device that handles packets being conveyed in the network tunnel.

18. The network device of claim 14, further comprising:
a queue, wherein
the control unit is configured to store the packet in the queue if the packet is
received out of sequence.
19. The network device of claim 18, wherein
the control unit is configured to remove the packet from the queue in response
to receiving and processing at least one packet, and
the at least one packet is earlier in a sequence of packets than the packet.
20. The network device of claim 19, wherein
the control unit is configured to recirculate the packet in response to removing
the packet from the queue, and
the control unit is configured to forward the packet in response to the packet
being recirculated.
21. The network device of claim 14, wherein
the control unit is configured to generate the information in response to the
input port receiving a plurality of packets via the network tunnel.
22. A system comprising:
a network tunnel;
an ingress network device coupled to send packets via the network tunnel, and
an egress network device coupled to receive packets sent via the network
tunnel, wherein
the egress network device is configured to provide information to the
ingress network device, and
the information indicates whether a packet transmitted from the ingress
network device to the egress network device was dropped in the
network tunnel.

23. The system of claim 22, wherein the ingress network device is configured to retransmit the packet to the egress network device if the packet is dropped in the network tunnel.

24. The system of claim 24, wherein the ingress network device comprises a queue, the ingress network device is configured to store a copy of each packet sent via the network tunnel in the queue, and the ingress network device is configured to remove a copy of a particular packet from the queue in response to the information indicating reception of the particular packet by the egress network device.

25. The system of claim 24, wherein the ingress network device is configured to adjust a rate at which packets are transmitted via the network tunnel if the information indicates that the packet was dropped.

26. The system of claim 24, wherein the ingress network device is configured to apply a packet drop algorithm to packets being transmitted via the network tunnel, and the packet drop algorithm differentiates between different packet flows being aggregated for transmission via the network tunnel.

27. The system of claim 23, wherein the egress network device comprises a queue, and the egress network device is configured to store the packet in the queue if the packet is received out of sequence.

28. The system of claim 27, wherein the egress network device is configured to remove the packet from the queue in response to receiving and processing at least one packet, wherein the at least one packet is earlier in a sequence of packets than the packet; and

the egress network device is configured to forward the packet in response to removing the packet from the queue.

29. A method comprising:

sending a packet via a network tunnel from a first network device; and
determining whether the packet is dropped in the network tunnel.

30. The method of claim 29, further comprising:

storing a copy of the packet in a queue in response to sending the packet via the network tunnel.

31. The method of claim 30, wherein the storing the copy of packet in the queue comprises:

recirculating the copy of the packet via a port associated with the queue.

32. The method of claim 30, further comprising:

removing the copy of the packet from the queue if the determining whether the packet is dropped in the network tunnel determines that the packet was successfully received at an egress of the network tunnel.

33. The method of claim 30, further comprising:

sending the copy of the packet from the queue via the network tunnel if the packet is dropped in the network tunnel.

34. The method of claim 30, further comprising:

identifying a flow of a plurality of flows being aggregated for transmission via the network tunnel, wherein the flow comprises a particular packet;
and

selecting whether the particular packet is admitted to the network tunnel based on the flow in which the particular packet is comprised.

35. The method of claim 30, further comprising:

controlling a usage level of the queue; and
admitting a particular packet for transmission via the network tunnel
dependent on the usage level of the queue, wherein the controlling the
usage level of the queue comprises:
adjusting a rate at which packets are removed from the queue.

36. The method of claim 29, further comprising:
sending information to the first network device, wherein the information
indicates whether the packet was dropped in the network tunnel.

37. The method of claim 36, further comprising:
storing the packet in a queue if the packet is received out of sequence by a
second network device.

38. The method of claim 36, further comprising:
removing the packet from the egress queue in response to receiving at least
one packet via the network tunnel, wherein
the at least one packet is earlier in a sequence of packets than the
packet; and
forwarding the packet in response to the removing the packet from the queue.

39. A method comprising:
receiving a packet being conveyed via a network tunnel; and
sending information to a network device, wherein
the information indicates successful receipt of the packet.

40. The method of claim 39, wherein
the information is sent in response to receiving a plurality of packets via the
network tunnel.

41. The method of claim 39, further comprising:
storing the packet in a queue if the packet is received out of sequence.

42. The method of claim 42, further comprising:
removing the packet from the queue in response to receiving at least one
packet via the network tunnel, wherein
the at least one packet is earlier in a sequence of packets than the
packet; and
forwarding the packet in response to removing the packet from the queue.
43. The method of claim 42, wherein
removing the packet from the queue comprises recirculating the packet.
44. The method of claim 39, further comprising:
sending the packet via the network tunnel; and
determining whether the packet is dropped in the network tunnel based on the
information.
45. The method of claim 44, further comprising:
storing a copy of the packet in a queue in response to sending the packet via
the network tunnel.
46. The method of claim 45, further comprising:
sending the copy of the packet from the queue via the network tunnel if the
packet is dropped in the network tunnel.
47. The method of claim 44, further comprising:
selecting whether a particular packet is admitted to the network tunnel
dependent on which one of a plurality of flows being aggregated for
transmission via the network tunnel comprises the particular packet.
48. A system comprising:
means for sending a packet via a network tunnel from a first network device;
and
means for determining whether the packet is dropped in the network tunnel.

49. The system of claim 48, further comprising:
means for storing a copy of the packet in a queue in response to sending the packet via the network tunnel.
50. The system of claim 49, wherein storing the copy of packet in the queue comprises:
recirculating the copy of the packet via a port associated with the queue.
51. The system of claim 49, further comprising:
means for removing the copy of the packet from the queue if it is determined that the packet was successfully received at an egress of the network tunnel.
52. The system of claim 49, further comprising:
means for sending the copy of the packet from the queue via the network tunnel if the packet is dropped in the network tunnel.
53. The system of claim 49, further comprising:
means for identifying a flow of a plurality of flows being aggregated for transmission via the network tunnel, wherein the flow comprises a particular packet; and
means for selecting whether the particular packet is admitted to the network tunnel based on the flow in which the particular packet is comprised.
54. The system of claim 49, further comprising:
means for controlling a usage level of the queue; and
means for admitting a particular packet for transmission via the network tunnel dependent on the usage level of the queue, wherein controlling the usage level of the queue comprises:
adjusting a rate at which packets are removed from the queue.

55. A system comprising:
means for receiving a packet being conveyed via a network tunnel; and
means for sending information to a network device, wherein
the information indicates successful receipt of the packet.

56. The system of claim 55, wherein
the information is sent in response to receiving a plurality of packets via the
network tunnel.

57. The system of claim 55, further comprising:
means for storing the packet in a queue if the packet is received out of
sequence.

58. The system of claim 57, further comprising:
means for removing the packet from the queue in response to receiving at least
one packet via the network tunnel, wherein
the at least one packet is earlier in a sequence of packets than the
packet; and
means for forwarding the packet in response to removing the packet from the
queue.

59. The system of claim 57, wherein
removing the packet from the queue comprises recirculating the packet.

60. A computer readable medium comprising program instructions
executable to:
send a packet via a network tunnel from a first network device; and
determine whether the packet is dropped in the network tunnel.

61. The computer readable medium of claim 60, wherein the program
instructions are further executable to:
store a copy of the packet in a queue in response to sending the packet via the
network tunnel.

62. The computer readable medium of claim 61, wherein storing the copy of packet in the queue comprises:

recirculating the copy of the packet via a port associated with the queue.

63. The computer readable medium of claim 61, wherein the program instructions are further executable to:

remove the copy of the packet from the queue if it is determined that the packet was successfully received at an egress of the network tunnel.

64. The computer readable medium of claim 61, wherein the program instructions are further executable to:

send the copy of the packet from the queue via the network tunnel if the packet is dropped in the network tunnel.

65. The computer readable medium of claim 61, wherein the program instructions are further executable to:

identify a flow of a plurality of flows being aggregated for transmission via the network tunnel, wherein the flow comprises a particular packet;
and
select whether the particular packet is admitted to the network tunnel based on the flow in which the particular packet is comprised.

66. The computer readable medium of claim 61, wherein the program instructions are further executable to:

control a usage level of the queue; and
admit a particular packet for transmission via the network tunnel dependent on the usage level of the queue, wherein
controlling the usage level of the queue comprises:
adjusting a rate at which packets are removed from the queue.

67. A computer readable medium comprising program instructions executable to:

receive a packet being conveyed via a network tunnel; and
send information to a network device, wherein
the information indicates successful receipt of the packet.

68. The computer readable medium of claim 67, wherein
the information is sent in response to receiving a plurality of packets via the
network tunnel.

69. The computer readable medium of claim 67, wherein the program
instructions are further executable to:

store the packet in a queue if the packet is received out of sequence.

70. The computer readable medium of claim 69, wherein the program
instructions are further executable to:

remove the packet from the queue in response to receiving at least one packet
via the network tunnel, wherein
the at least one packet is earlier in a sequence of packets than the
packet; and
forward the packet in response to removing the packet from the queue.

71. The computer readable medium of claim 69, wherein
removing the packet from the queue comprises recirculating the packet.